

Serial No.: 892351
Series Code: 09
Filed: June 28, 2001

U.S. Current Class: 382/154; 382/167
U.S. Class at Publication: 382/154; 382/167
Intern'l Class: G06K 009/00

Foreign Application Data

Date Code Application Number
Jun 30, 2000 NZ505513

Claims

1. Anaglyphic production method for anaglyphic record, still or motion, image or text, in color format by either digital or non-digital means in whole or in part including steps of;
 - a. isolating any two separate records of image or text and or synchronizing the images of a stereo pair to achieve an image pair that consists of a first image or images and a second image or images;
 - b. effecting selective color filter treatments to the color records of a first image or images of step a, to enable contrasts from the whole spectrum to be perceived anaglyphically from within the part spectrum of an assigned anaglyphic color channel saturation and enable perception of an anaglyphically viewed contrast balance with the selective color filter treated image or images of step c, and where such selective color filter treatments are applied to either individual color records or to the entire color record to the nth degree and if applied are of custom values so as to compensate for or to compliment later treatment options of anaglyphic colour channel saturation of step g or step i,
 - c. effecting selective color filter treatments to the color records of a second

image or images of step a, to enable contrasts from the whole spectrum to be perceived anaglyphically from within the part spectrum of an assigned anaglyphic color channel saturation and enable perception of an anaglyphically viewed contrast balance with the selective color filter treated image or images of step b, and where such selective color filter treatments are applied to either individual color records or to the entire color record to the nth degree and if applied are of custom values so as to compensate for or to compliment later treatment options of anaglyphic color channel saturation of step h or step i;

d. optionally effecting selective color filter treatments for control of increasing the brightness in the resulting anaglyphic image by selectively increasing the saturation of the black color records of both or either of the said image pair to the nth degree either instead of or as part of the selective color filter treatments of steps b and c or desaturation of step e, and effecting control of decreasing the brightness in the resulting anaglyphic image by selectively decreasing the saturation of the black color records of both or either of the said image pair to the nth degree either instead of or as part of the selective color filter treatments of steps b and c or desaturation of step e;

e. effecting an optional de-saturation of both or either of the color records of the image pair of step a, instead of the selective color filter treatments of steps b and c;

f. the reduction and or compression of the luminosity of the said image pair executed pre or post the selective color filter treatments of steps b, c, d or desaturation step e, and prior to the colour channel saturation treatments of steps g, h or i;

g. effecting a first anaglyphic color channel saturation applied to a first image or images of step a, to be viewed through a first colored filter resulting in an anaglyphic colour channel saturation that is mutually a spectral opposite to the colour channel saturation treated images of step h;

h. effecting a second and third anaglyphic color channel saturation applied to a second image or images of step a, to be viewed through a second colored filter resulting in an anaglyphic color channel saturation that is mutually a spectral opposite to the colour channel saturation treated images of step g;

i. effecting spectrally opposing anaglyphic colour saturations to the selective colour filter treated image pair of steps b, c, d or desaturation step e, by control of colour output level values as an alternative or accompaniment to the luminosity compression of step f, and an alternative to the colour channel saturations of steps g and h;

j. effecting a blending the said image pair as a single record so as to reveal equal representations of the said image pair in the resulting luminosity compressed anaglyphic composite image;

k. effecting a maximization of contrasts of the color records of the said luminosity compressed anaglyphic composite image resulting in a contrast expansion of the anaglyphic color channels contained therein,

2. Apparatus for the display of anaglyphic record produced in accordance with the anaglyphic production method as claimed in claim 1, the apparatus comprising;

a. anaglyphic record produced in accordance with claim 1 of fixed color channel orientation that may be sent or received on-line, stored and reproduced from a recording medium and broadcast;

b. a monitor or projection screen display or other such reproduction and display device of color format for the display of said fixed color channels that consist of more than two color saturations and represent still or motion anaglyphic record;

c. a printing means, machine or device, photographic, lithographic, LED or any system of colour format for the reproduction of said fixed color channels that consist of more than two color saturations and represent still anaglyphic record as printed display;

d. anaglyphic filter viewing gel of common frequency and of neutral viewing orientation that enable the selective and colour corresponding passive transmission of said anaglyphic color channel displays to an observer or;

e. a selective and active color record removal means that removes a selected color record from the anaglyphic record of part a, to enable a selected anaglyphic color channel display of part b, to be viewable unaided by an observer;

f. anaglyphic filter viewing gels of opposing spectral frequencies and of fixed viewing orientation that correspond to the anaglyphic color channels of the anaglyphic record of part a, including gel of primary red opposing green-blue;

g. a display medium on which to receive an exposure or print from said printing means.

3. Anaglyphic record produced in accordance with the anaglyphic production method of claim 1, that may exhibit;

a. still image as print perceived stereoscopically as three-dimensional and being monochromatic or colored image with balanced contrasts from the whole color spectrum within each anaglyphic color channel via anaglyphic filter means with spectral split and where individual color channels being unrelated or interrelated are perceived as two-dimensional and monochromatic with contrasts from the whole color spectrum via common frequency filter;

b. monitor or projection display of still or motion anaglyphic record perceived stereoscopically as three-dimensional being monochromatic or colored image with balanced contrasts from the whole color spectrum within each anaglyphic color channel via anaglyphic filter means with spectral split and where individual color channels being unrelated or interrelated are perceived as two-dimensional and monochromatic with contrasts from the whole color spectrum via common frequency filter;

c. contrasts from the whole color spectrum present in either color channel selected from the monitor or projection displays of exhibit b, viewed unaided as two-dimensional and monochromatic via active or passive color removal means.

4. An anaglyphic production method as claimed in claim 1, manual or automated, digital or analogue where two anaglyphic colour channels which contain more than two colour saturations and represent visual records, modulate between two anaglyphic display orientations at any rate selected to establish a modulation rate optionally including no modulation so that at any instant during either an odd or even field scan, more than two colour saturations are displayed with a first colour saturation as one anaglyphic channel and second and third colour saturations as the opposing anaglyphic colour channel including steps of;

- interpolating two versions of an anaglyphic record produced as claimed in claim 1 where the orientation of their colour channel displays are opposite or;
- isolating any two separate records of image or text or isolating and or synchronizing the images of a stereo pair to achieve an image pair that consists of a first image or images and a second image or images and alternating the image pair between said anaglyphic processes and;
- effecting the application of index or synchronizing signals or pulses to the incidence of said modulation, interpolation or alternation at a consistent frequency and;
- optionally, selectively removing by active or passive means, a colour record or a cycle of colour records selected for removal that corresponds to and or synchronizes with a colour record or a cycle of modulating colour records that anaglyphically contain a visual channel of image or text to isolate a separate visual channel.

5. Modulating anaglyphic color channel display produced as claimed in claim 4 that exhibits;

- still or motion interrelated image or text perceived stereoscopically as three-dimensional with balanced color contrasts from the whole spectrum either as monochromatic or as color record simultaneously and continuously by both eyes from a multiplex of anaglyphic color channels via synchronized and color corresponding electro-optic/anaglyphic means;

b. image from either visual channel of still or motion exhibit a, perceived unaided as monochromatic or as color record and two dimensional simultaneously and continuously by both eyes via a modulation of active or passive color record removal synchronous with a selected modulating color channel;

6. Modulating anaglyphic color channel display production method as claimed in claim 4 or of any anaglyphic production method resulting in a modulation of three color saturations in two anaglyphic color channels, where four anaglyphic display orientations are produced that modulate in a cycle as two anaglyphic channels so that at any instant during either an odd or even field scan only one of the second or third color saturation assignments of anaglyphic color channels are present in the anaglyphic display and anaglyphically oppose a first color saturation assignment including steps of;

a. effecting a selective and alternate active removal of second and third color saturation assignments from modulating anaglyphic color channel displays produced as claimed in claim 4 in a cycle of consistent frequency so that at any instant during an odd or even field scan only two color saturations are present with one color saturation in each anaglyphic color channel and;

b. in conjunction with step a, effecting a sustained reduction of brightness or output level of a first color saturation assignment proportionate to its relative over-inclusion in the resulting cycle of modulating color channel orientations and;

c. optionally, selectively removing by active or passive means, a color record or a cycle of color records selected for removal that correspond to and or synchronise with a color record or a cycle of modulating color records that anaglyphically contain a visual channel of image or text to isolate a separate visual channel.

7. Modulating anaglyphic color channel display as claimed in claim 6 that exhibits;

a. still or motion interrelated image or text perceived stereoscopically as three-dimensional with balanced contrasts from the whole spectrum either as monochromatic or as full color record simultaneously and continuously by both eyes from a multiplex of primary color image planes contained in anaglyphic primary colour channels via synchronized and color corresponding electro-optic/anaglyphic means;

b. image from either visual channel of still or motion exhibit a, being unrelated or interrelated perceived unaided as monochromatic or as full color record and two dimensional simultaneously and continuously by both eyes from a multiplex of primary color image planes contained in either anaglyphic color channel via a modulation of active or passive color record removal

synchronous with a selected modulating color channel.

8. Apparatus for the display of modulating anaglyphic record produced in accordance with the modulating anaglyphic color channel display production method as claimed in claim 6, the apparatus comprising;

- a. modulating anaglyphic record as claimed in claim 6 that may be sent or received on-line, stored and reproduced from a recording medium and received as broadcast;
- b. a first power supply enabling a signal detection means for the detection of synchronizing signals and field differentiated signals from the intercepted modulating program of part a, to differentiate between frames and to determine the programs modulation rate and accordingly produce signals as representations of synchronizing signals and of the modulation rate for the transmission means of part g; and also for the color removal means of part c, and the switching logic means of part e;
- c. an optional color removal means to occur either in production or in post production for a conversion from a mode of modulation of two anaglyphic display orientations to a mode of modulation of four anaglyphic display orientations by effecting a selective and alternate active removal of second and third color saturation assignments from the intercepted modulating anaglyphic record of part a, in a cycle of consistent frequency and initiating such effect at the incidence of synchronizing signal detection;
- d. in conjunction with optional part c, a selective color luminance reducing means effecting a sustained reduction of brightness or output level of luminosity of a first color saturation assignment proportionate to it's relative over-inclusion in a resulting cycle of modulating colour channel orientations;
- e. a switching logic means that responds to the signal detection means of part b, to synchronise a cycle of two or more frames and produce a synchronising voltage selection for the modulating color record removal means of parts l and m;
- f. a display means for the reproduction and display of said modulating anaglyphic colour channels on a monitor or screen or as a projection or any other such color reproduction and display device;
- g. a transmission means for the transmission of signals representing synchronizing signals and signals representing the modulation rate from the signal detection means of part b, via radio, optical or any suitable medium to a receiving means of part h, incorporated with electro-optic/anaglyphic viewing filters of parts j and k;
- h. a second power supply enabling a receiving means to receive a transmitted carrier signal from said transmission means and to detect and re- generate

signals representing synchronizing signals and signals representing the modulation rate for their delivery to a switching logic means of part i;

i. a switching logic means that responds to synchronising signals and signals representing the modulation rate from the receiving means of part h, that synchronises a cycle of two or more frames and selects trigger voltages for the synchronisation of electro-optic/anaglyphic filter presentations of parts j, and k, with said anaglyphic color channel displays;

j. electro-optic/anaglyphic filters consisting of a pair of electro-optic light modulating filter elements that respond to the synchronizing voltage selection of switching logic of part i, and present transitions between two filter presentations of anaglyphically opposing hues that together allow the transmission of three color saturations with a transmission of a first colour saturation through one filter and a transmission of second and third color saturations through the opposing filter and or;

k. electro-optic/anaglyphic filters consisting of a pair of electro-optic light modulating filter elements that respond to the synchronizing voltage selection of switching logic of part i, and present transitions between four filter presentations of anaglyphically opposed hues and where each filter element enables three color transmitting filter states that each allow the transmission of one saturated color where a first color filter is consistently and alternately presented for either visual channel throughout all four presentations with the second and third colour filter saturations alternately opposing at equal frequency and or;

l. a modulating color record removal means that responds to the synchronising voltage selection of switching logic of part e, to effect a cycle of active color removal synchronous with either selected modulating anaglyphic color channel as an unaided two dimensional alternative to electro-optic parts j and k and or;

m. a modulating color record removal means consisting of an electro-optic light modulating filter element that covers or is integral with the monitor or screen display of part f, and responds to the synchronising voltage selection of switching logic of part e, to effect a cycle of passive color removal synchronous with either selected modulating anaglyphic color channel as an unaided two dimensional alternative to electro-optic parts j and k.

9. A printed anaglyphic/lenticular production method, digital or non digital in whole or in part, manual or automated, for the production of multiple concurrent and interactive still or motion anaglyphic visual channels in color format on a printed surface, including steps of;

a. the production method for anaglyphic processing of image or text as claimed in claim 1 applied to an image pair resulting in an anaglyphic image and or any

anaglyphic production method applied to multiple image pairs resulting in multiple anaglyphic images of fixed viewing orientation and;

b. where there is more than one anaglyphic image of step a, horizontally interpolating the anaglyphic images of step a, via optical, digital or manual assembly means at a frequency such that the interpolated representations of each of the anaglyphic images are specific to horizontal zones that will fit under each corresponding horizontally oriented lenticular lens of step e;

c. delivering the image signal of the anaglyphic image of step a, or the image signal of the interpolated anaglyphic images of step b, to a printing means of step d, and;

d. printing the image signal of step c, onto a display medium as printed anaglyphic record and or;

e. where the image signal of step c, is that of the horizontally interpolated anaglyphic images of step b, securing a horizontally oriented lenticular lens array over the printed anaglyphic images of step d, so that interpolated anaglyphic image representations specific to each horizontal zone fit under each lenticular lens, or correspondingly applying printing or exposing the horizontally interpolated anaglyphic images of step b, to the undersurface of the horizontally oriented lenticular array of lenses.

10. Printed anaglyphic/lenticular image display produced in accordance with the production method as claimed in claim 9 where the anaglyphic images exhibit;

a. multiple records of unrelated image or text perceived two-dimensionally with contrasts from the whole spectrum from within either anaglyphic color channel via common filter anaglyphic means;

b. multiple records of interrelated image or text specific to each color channel where each color channel displays a two-dimensional record of motion perceived with contrasts from the whole spectrum via common filter anaglyphic means;

c. multiple unrelated stereoscopic views perceived horizontally, vertically or diagonally as three-dimensional and either as monochromatic or colored with spectral split from both anaglyphic color channels via color corresponding anaglyphic filters;

d. multiple interrelated stereoscopic views of concurrent horizontal and vertical parallax and or motion perceived either as monochromatic or colored with spectral split from both anaglyphic color channels via color corresponding anaglyphic filters;

e. still printed image perceived stereoscopically as three-dimensional and being monochromatic or colored image with balanced contrasts from the whole color spectrum within each anaglyphic color channel via anaglyphic filter

means with spectral split and where individual color channels being unrelated or interrelated are perceived as two-dimensional and monochromatic with contrasts from the whole color spectrum via common frequency filter.

11. Apparatus for the display of anaglyphic/lenticular images produced in accordance with the production method as claimed in claim 9, the apparatus comprising of;

- a. anaglyphic printed images produced as claimed in claim 9 that may be sent or received on-line, stored and reproduced from a recording medium;
- b. lenticular sheet consisting of an array of lenticular lenses of suitable pitch or frequency that enable an interactive visual channelling of anaglyphic printed images of part a, from a display medium of part e, contiguous with it's underside via refraction;
- c. a printing means, system, machine or photographic device, LED, lithographic or any other such printing system of color format for the reproduction of two anaglyphic color channels representing said anaglyphic still or motion visual records as print;
- d. anaglyphic filter viewing gels of common filter frequency that correspond to a selected anaglyphic color channel of the display medium of parts e, and f, and or anaglyphic filter viewing gels of fixed viewing orientation and of opposing spectral frequencies that correspond to said anaglyphic color channels including gel of primary red opposing green-blue;
- e. a display medium on which to receive printed anaglyphic image or interpolated anaglyphic images from the printing means of part c, and or;
- f. a display medium on which to receive a print or exposure of anaglyphic image or of interpolated anaglyphic images from the printing means of part c, and where such display medium is integral with the lenticular sheet of part b.

12. Quadrascopic/Anaglyphic production method, digital or non digital in whole or in part, manual or automated, for the concurrent and interactive display of four separate visual channels consisting of two separate still or motion anaglyphic records of image or text of fixed anaglyphic color channel display orientation from one image signal or printed image, comprising steps of;

- a. the anaglyphic production method for anaglyphic record as claimed in claim 1, or of any anaglyphic production method applied to two image pairs being either unrelated or interrelated resulting in two anaglyphic records and;
- b. the field interpolation of two separate anaglyphic records of step a, into one image signal so as to separately allocate the two anaglyphic records as odd and even field scans or;
- c. switching the two inputs of the anaglyphic process of step a, between four visual channels or;

- d. the interpolation of two still anaglyphic records of step a, for print.
- 13. Apparatus for the display of quadrascopic/anaglyphic images produced in accordance with claim 12, the apparatus comprising of;
 - a. anaglyphic/Quadrascopic images of fixed color channels as claimed in claim 12 that may be sent or received on-line, stored and reproduced from a recording medium and received as broadcast;
 - b. a securable lenticular sheet consisting of an array of lenticular lenses of suitable pitch or frequency that enable an interactive vertical visual channelling of images, text or other such anaglyphic matter of part a, displayed on the field scan lines of a reproduction and display device of part c, or of interpolated printed image from the display medium of part h, or part i, via refraction;
 - c. an reproduction and display monitor, screen or projection means that delivers visual parallax by any method and that may consist of an odd/even field scan display device of color format where a lenticular array of lenses contiguous or integral with the display surface and where the orientation of the lenticular array of lenses is horizontal and consists of a frequency of lenses such that each lenticular lens covers an odd and an even field scan line so as to effect an upper and lower vertical channelling of the anaglyphic displays of part a, that contain four visual channels, from the field scans via refraction;
 - d. an active selective color record removal means to remove the color record assigned to an anaglyphic color channel of part a, containing two visual channels, to isolate an opposing anaglyphic color channel for the unaided lenticular viewing of an interactive choice between its two visual channels from the display means of part c, and;
 - e. a printing means, machine or device, photographic, LED or lithographic or any other such printing system of color format for the reproduction of two anaglyphic color channels representing the said images of part a, displayed on a display medium of part h or part i;
 - f. anaglyphic filter gel of common filter frequency that corresponds to an anaglyphic color channel display of parts c, h, or i;
 - g. anaglyphic filter viewing gels of opposing spectral frequencies and of fixed viewing orientation that correspond to anaglyphic color channel displays of parts c, h, or i, including gel of primary red opposing green-blue;
 - h. a display medium on which to receive printed anaglyphic images from said printing means for display under a securable lenticular sheet of part b and or;
 - i. a display medium on which to receive a print or exposure of anaglyphic image or of interpolated anaglyphic images from said printing means and where such display medium is integral with the lenticular sheet of part b.

14. Quadrascopic/Anaglyphic image display produced in accordance with the production method as claimed in claim 12 that exhibits;

- a. monitor or screen display of four separate visual channels being anaglyphic record of image or text that may be unrelated or interrelated in whole or in part across configurations between horizontal, vertical and diagonal image pairs and also combinations of still and motion record and combinations of two and three-dimensional record and combinations of monochromatic and color record including, color perception of concurrent horizontal and vertical parallax and motion perceived via refraction or via any visual parallax delivery method, and color corresponding anaglyphic filter gel with spectral split;
- b. an unaided two-dimensional interactive choice of two monochromatic visual channels from each anaglyphic channel of monitor or screen display exhibit a, via active or passive selective color record removal means;
- c. printed display of four separate visual channels of anaglyphic record of image or text that may be unrelated or interrelated in whole or in part across configurations between horizontal, vertical and diagonal image pairs and also combinations of two and three-dimensional record and combinations of monochromatic and color record including, color perception of concurrent horizontal and vertical parallax perceived via refraction and color corresponding anaglyphic filter gel with spectral split;
- d. a two-dimensional interactive choice of two monochromatic visual channels from each anaglyphic channel of printed display exhibit c, via passive selective colour record removal means.

15. A modulating Quadrascopic/anaglyphic production method, digital or non digital in whole or in part, manual or automated, where the anaglyphic color channel displays of two separate still or motion anaglyphic records of image or text, unrelated or interrelated in whole or in part and representing four visual channels, modulate between two anaglyphic display orientations as claimed in claim 4 and are interpolated together as odd and even field scans in one image signal, comprising steps of;

- a. the modulating anaglyphic production method as claimed in claim 4 or of any anaglyphic production method applied to two pairs of interrelated or unrelated visual records to enable two separate modulating anaglyphic records;
- b. field interpolating the two modulating anaglyphic records step a, as odd and even field scans or;
- c. switching the two inputs of the anaglyphic process of step a, between four visual channels;

d. optionally, selectively removing by active or passive means, a color record or a cycle of color records selected for removal that correspond to and or synchronize with a color record or a cycle of modulating color records that anaglyphically contain visual channels, to isolate separate visual channels.

16. Modulating quadrascopic/anaglyphic image display produced in accordance with the production method as claimed in claim 15 that exhibits;

a. monitor or screen display of four separate visual channels of anaglyphic record of image or text that may be unrelated or interrelated in whole or in part across horizontal, vertical and diagonal image pair combinations where also combinations of still and motion record and combinations of two and three-dimensional record and combinations of monochromatic and color record and combinations of modulation rate all interrelate, including the color perception to both eyes simultaneously of concurrent horizontal and vertical parallax and motion from a multiplex of anaglyphic color channels via refraction or via any visual parallax delivery method, and synchronous and color corresponding electro-optic/anaglyphic filters or;

b. an unaided two-dimensional monochromatic or colored interactive choice of two visual channels from each anaglyphic channel of monitor or screen display exhibit a, via active or passive modulating color record removal synchronous with a selected modulating color channel.

17. A modulating quadrascopic/anaglyphic production method where four anaglyphic display orientations modulate in a cycle as two anaglyphic channels as claimed in claim 6 where the two anaglyphic channels represent four visual channels, comprising steps of;

a. the modulating anaglyphic color channel display production method as claimed in claim 6 applied to two pairs of interrelated or unrelated visual records to enable two separate modulating anaglyphic records;

b. field interpolating the two modulating anaglyphic color channel displays of step a, as odd and even field scans or;

c. switching the two inputs of the said anaglyphic process between four visual channels;

d. optionally, selectively removing by active or passive means, a colour record or a cycle of colour records selected for removal that correspond to and or synchronise with a colour record or a cycle of modulating colour records that anaglyphically contain visual channels, to isolate separate visual channels.

18. Modulating quadrascopic/anaglyphic image display produced in accordance with the production method for modulating anaglyphic/lenticular image as claimed in claim 17 that exhibits;

- a. monitor or screen display of four separate visual channels being anaglyphic record of image or text that may be unrelated or interrelated in whole or in part across horizontal, vertical and diagonal image pair combinations where also combinations of still and motion record and combinations of two and three-dimensional record and combinations of monochromatic and full color record and combinations of modulation rate all interrelate, including the full color perception to both eyes simultaneously of concurrent horizontal and vertical parallax and motion from a multiplex of anaglyphic primary color image planes contained within anaglyphic channels via refraction or via any visual parallax delivery method, and synchronous and color corresponding electro-optic/anaglyphic filters or;
- b. an unaided two-dimensional monochromatic or full colored interactive choice of two visual channels from each anaglyphic channel of monitor or screen display exhibit a, via active or passive modulating color record removal synchronous with a selected modulating color channel.

19. Apparatus for the display of modulating quadrascopic/anaglyphic image or text produced in accordance with the production method of claim 15, the apparatus comprising of;

- a. modulating quadrascopic/anaglyphic image produced as claimed in claim 15 that may be sent or received on-line, stored and reproduced from a recording medium and received as broadcast;
- b. a first power supply means enabling a signal detection means for the detection of synchronizing signals and field differentiated signals from the intercepted modulating program of part a, to differentiate between frames and determine the programs modulation rate and accordingly produce signals as representations of synchronizing signals and of the modulation rate for transmission part g, and also for the active color removal means of part c, and the switching logic means of part e;
- c. an optional active color removal means for either production or post production for a conversion from a mode of modulation of two anaglyphic display orientations to a mode of modulation of four anaglyphic display orientations by effecting a selective and alternate active removal of second and third colour records from the intercepted modulating anaglyphic record of part a, in a cycle of consistent frequency and initiating such effect at the incidence of synchronizing signal detection;

- d. optionally and in conjunction with optional part c, a selective color luminance reducing means effecting a sustained reduction of brightness or output level of luminosity of a first color record proportionate to its relative over-inclusion in a resulting cycle of modulating color channel orientations;
- e. a switching logic means that responds to the signal detection means of part b, to synchronize a cycle of two or more frames and produce a synchronizing voltage selection for the modulating color record removal means of parts l and m;
- f. a reproduction and display monitor, screen or projection means of color format that delivers visual parallax by any method and that may consist of an odd/even field scan display device where a lenticular array of lenses is contiguous or integral with the display surface and where the orientation of the lenticular array of lenses is horizontal and consists of a frequency of lenses such that each lenticular lens covers an odd and an even field scan line so as to effect an upper and lower vertical channelling of anaglyphic displays of part a, from the field scans via refraction;
- g. a transmission means for the transmission of signals representing the index or other such synchronizing signals and signals representing the modulation rate via radio, optical or any suitable medium to a receiving means incorporated with electro-optic/anaglyphic viewing filters of parts j or k;
- h. a second power supply means enabling a receiving means to receive said transmitted signals and to detect and re-generate signals representing the index or other such synchronizing signals and signals representing the modulation rate for their delivery to a switching logic means of part i;
- i. a second switching logic means that responds to synchronizing signals and signals representing the modulation rate from the receiving means of part h, that synchronizes a cycle of two or more frames and selects trigger voltages for the synchronization of electro-optic/anaglyphic filter presentations of parts j or k with said anaglyphic color channel displays;
- j. electro-optic/anaglyphic filters consisting of a pair of electro-optic light modulating filter elements that respond to the synchronizing voltage selection of switching logic of part i and present transitions between two filter presentations of anaglyphically opposing hues that together allow the transmission of three color saturations with a transmission of a first color saturation through one filter and a transmission of second and third color saturations through the opposing filter and or;
- k. electro-optic/anaglyphic filters consisting of a pair of electro-optic light modulating filter elements that respond to the synchronizing voltage selection of switching logic of part i and present transitions between four filter presentations of anaglyphically opposed hues and where each filter element enables

three color transmitting filter states that each allow the transmission of one saturated color where a first color filter is consistently and alternately presented for either visual channel throughout all four presentations with the second and third color filter saturations alternately opposing at equal frequency and or;

1. a modulating active color record removal means that responds to the synchronizing voltage selection of the switching logic of part e, to effect a cycle of active color record removal synchronous with either selected modulating anaglyphic color channel as an unaided two dimensional alternative to electro-optic parts j and k and or;

m. a modulating color record removal means consisting of an electro-optic light modulating filter element that covers or is integral with the monitor or screen display of part f, and responds to the synchronizing voltage selection of switching logic of part e, to effect a cycle of passive color removal synchronous with either selected modulating anaglyphic color channel as an unaided two dimensional alternative to electro-optic parts j and k.

20. Autostereoscopic modulating quadrascopic/anaglyphic production method, digital or non digital in whole or in part, manual or automated, for a selectable choice between two autostereoscopic programs from one image signal, comprising steps of;

a. the modulating quadrascopic/anaglyphic production method as claimed in claim 15, where the four originating images consist of two stereo pairs being unrelated or interrelated where the two left views form a first anaglyphic record and the two right views form a second anaglyphic record;

b. either field interpolating the first and second anaglyphic records of the production method of step a, together as odd and even field scans to achieve modulating anaglyphic color channels consisting of four visual channels or switching the inputs of the anaglyphic process of claim 15 between four visual sources to effect the same;

c. optionally effecting a selective and alternate active removal of second and third colour records from the first and second anaglyphic records of step b, in a cycle of consistent frequency and initiating such effect at the incidence of synchronizing signal detection and;

d. in conjunction with optional step c, effecting a sustained reduction of brightness or output level of the luminosity of a first color record proportionate to its relative over-inclusion in the resulting cycle of modulating color channel orientations;

e. effecting a selective modulating cycle of active or passive color record removal synchronous with modulating color records assigned to either said modulating anaglyphic color channel to enable an autostereoscopic perception

of the remnant modulating anaglyphic records from a display means of step f via refraction;

f. displaying the said remnant modulating anaglyphic records onto a color format monitor, screen or projection display means that delivers visual parallax by any method and that may consist of an odd/even field scan display device where a lenticular array of lenses is contiguous or integral with the display surface and where the orientation of the lenticular array of lenses is vertical and consists of a frequency of lenses such that each lenticular lens covers an odd and an even field scan line so as to effect a horizontal channelling of two anaglyphic displays from the field scans via refraction;

21. Autostereoscopic modulating quadrascopic/anaglyphic image display as claimed in claim 20 that exhibits;

a. a switchable choice between two separate autostereoscopic visual channels of anaglyphic record of image or text that may be unrelated or interrelated where also combinations of selected modulating color record removal and combinations of two and three-dimensional record and combinations of still and motion record and combinations of monochromatic and full color record and combinations of modulation rate all interrelate, including the selectable choice between two concurrent and interrelated autostereoscopic programs of horizontal and vertical parallax and motion from one image signal perceived in full color to both eyes simultaneously from a multiplex of anaglyphic primary color image planes contained within remnant anaglyphic color channels via refraction or via any visual parallax delivery method, and selective and synchronous active or passive modulating color record removal.

22. Apparatus for the display of autostereoscopic modulating quadrascopic/anaglyphic image produced in accordance with the production method of claim 20 comprising of;

a. autostereoscopic modulating quadrascopic/anaglyphic image produced as claimed in claim 20 that may be sent or received on-line, stored and reproduced from a recording medium and received as broadcast;

b. a first power supply means enabling a signal detection means for the intercepted modulating program of part a, for the detection of synchronizing signals and field differentiated signals to determine the programs modulation rate and accordingly produce signals as representations of synchronizing signals and of the modulation rate for a switching logic means of part c;

c. a switching logic means that responds to the signal detection means of part b, to synchronize a cycle of two or more frames and produce a synchronizing voltage selection for the modulating color record removal means of parts d and e;

d. an active modulating color record removal means that responds to the

switching logic of part c, to remove a cycle of color records that correspond to and synchronize with a selected cycle of modulating anaglyphic color channels that contain one or more visual channels from the image signal for the display means of part f and or;

e. a modulating color record removal means consisting of an electro-optic light modulating filter element that covers or is integral with the monitor or screen display of part f, and responds to the synchronizing voltage selection of switching logic of part c, to effect a cycle of passive color removal synchronous with either selected modulating anaglyphic color channel;

f. a reproduction and display monitor, screen or projection means of color format that delivers visual parallax by any method and that may consist of an odd/even field scan display device where a lenticular array of lenses is contiguous or integral with the display surface and where the orientation of the field scans and that of the lenticular array of lenses is vertical and consists of a frequency of lenses such that each lenticular lens covers an odd and an even field scan line so as to effect a horizontal channelling of anaglyphic displays from the field scans via refraction.

23. Quadrascopic/Strobe production method, digital or non digital in whole or in part, manual or automated, where two pairs of still or motion displays of image or text being unrelated or interrelated in whole or in part and representing four visual channels, alternate sequentially as two representations for left views and two representations for right views, including steps of;

a. isolating any two image pairs of separate records of image or text being unrelated or interrelated as a left image pair and a right image pair;

b. either field interpolating together a left image pair of step a, or switching between them at a first frequency to result in a left interpolated record and either field interpolating together a right image pair of step a, or switching between them at a first frequency to result in a right interpolated record and;

c. either frame interpolating the left interpolated record of step b, with the right interpolated record of step b, or switching between them at a frequency half that of the first frequency and;

d. effecting the application of index or synchronizing signals or pulses to the incidence of said interpolation or switching at a consistent frequency or;

e. effecting a selective and sequential field rate switching cycle between four visual sources to result in a cycle of two left views and then two right views and effecting the application of synchronizing signals of step d.

24. Apparatus for the display of quadrascopic/strobe produced in accordance with the production method of claim 23, the apparatus comprising of;

a. quadrascopic/strobe image produced as claimed in claim 23 that may be sent or

received on-line, stored and reproduced from a recording medium and received as broadcast;

b. a first power supply means enabling a signal detection means for the detection of synchronizing signals and field differentiated signals from the quadrascopic/strobe image program of part a, to determine the programs strobe rate and accordingly produce signals as representations of synchronizing signals and of the strobe rate for transmission part d;

c. a reproduction and display monitor, screen or projection means that delivers visual parallax by any method and that may consist of an odd/even field scan display device where a lenticular array of lenses is contiguous or integral with the display surface and where the orientation of the lenticular array of lenses is horizontal and consists of a frequency of lenses such that each lenticular lens covers an odd and an even field scan line so as to effect an upper and lower vertical channelling of the strobe displays from the field scans via refraction;

d. a means for the transmission of synchronizing signals and signals representing the strobe rate via radio, optical or any suitable medium to a receiving means incorporated with electro-optic/shutters of part g;

e. a second power supply means enabling a receiving means to receive said transmitted signal and to detect and re-generate signals representing synchronizing signals and signals representing the strobe rate for their delivery to a switching logic means of part f;

f. a switching logic means for the determination and selection of trigger voltages for the synchronization of electro-optic/shutter presentations of part g, with said lenticular/strobe image displays;

g. electro-optic/shutter glasses consisting of a pair of electro-optic light valve elements that respond to the synchronizing voltage selection of switching logic of part f, and present alternations between open and shut states so that at any instant one light valve is open for view and the other light valve is shut for view.

25. Quadrascopic/Strobe image display produced as claimed in claim 23 that exhibits;

a. a switch-able and interactive choice between four separate visual channels of image or text that may be unrelated or interrelated in whole or in part across horizontal, vertical and diagonal image pair combinations and where also combinations of two and three-dimensional record and combinations of still and motion record and combinations of monochromatic and full color record and combinations of modulation rate all interrelate, including the interactive choice between two concurrent and interrelated stereoscopic programs of horizontal and vertical parallax and motion from one image signal perceived in

full color to both eyes from alternating left-right sequential strobe display via refraction or via any visual parallax delivery method, and synchronous electro-optic/shutter glasses.

26. Apparatus for the production of anaglyphic images, the apparatus consisting of;
 - a. an image isolation means being a scanner or digitizer of images or a stereoscopic camera for still or motion stereoscopic capture of an image pair for anaglyphic production as claimed in claim 1 and or any multiplicity of image isolation means or of monocular or stereoscopic cameras for the capture of one or more pairs of image or text for anaglyphic processing of still or motion anaglyphic record by any production method for display as interpolated anaglyphic print or for still or motion interpolated anaglyphic records displayed on a monitor or screen or as projected display and that may also or alternatively process externally sourced input signals by means of;
 - b. computer software for still or motion record processing or;
 - c. integrated circuitry for still or motion record processing or;
 - d. separate analogue and or digital components in series consisting of;
 - e. color selective filters to effect selective color filter treatments of the images produced from the image isolation means of part a;
 - f. a luminosity compression means that reduces or compresses the luminosity or contrast or output levels of the images produced from the image isolation means of part a, and or from said color selective filters;
 - g. an anaglyphic color channel saturation means for each of the isolated images thus produced;
 - h. an image blending means for the images produced from the color saturation means of part g;
 - i. a contrast expansion means for the color records of the images produced from the image blending means of part h, resulting in a contrast expansion of the anaglyphic color channels contained therein;
 - j. an interpolation means for the interpolation of multiple anaglyphic records produced from the capture of multiplicity's of image isolation means of part a, at a frequency such that the interpolated representations of each of the anaglyphic records are specific to horizontal zones that fit under each corresponding horizontally oriented lenticular lens of part m, and;
 - k. a printing means, system, machine or photographic device, LED, lithographic or any other such printing system of color format for the reproduction of anaglyphic record from the image isolation means and said production method of part a, and or the reproduction of anaglyphic record from the interpolation means of part j, as print, on;
 - l. a printing medium on which to receive and display anaglyphic record from the

printing means of part k, and or;

m. a printing medium consisting of a lenticular array of lenses on which to receive and display an anaglyphic record of the interpolation means of part j, from the printing means of part k, so that anaglyphic image representations specific to each horizontal zone fit under each lenticular lens, or correspondingly, a lenticular array of lenses secured over the interpolated anaglyphic record of the interpolation means of part j, displayed on the printing medium of part l, and or;

n. a display means being a monitor, screen or projection device of color format for the reproduction and display of image produced from the image isolation means and said production method of part a,

o. a field interpolating means for where two pairs of still or motion image or text are captured by multiplicity's of image isolation means of part a, and are anaglyphically processed, for interpolation as odd and even field scans on said reproduction and display means and;

p. a recording medium, analogue or digital for the storage and retention of still or motion anaglyphic record thus produced and or for the storage and retention of still or motion stereoscopic record or records for such processing.

q. any visual parallax delivery means contiguous or integral with said display means and where such may consist of a lenticular array of lenses where the orientation of the field scans and that of the lenticular array of lenses is parallel and consists of a frequency of lenses such that each lenticular lens covers an odd and an even field scan line so as to effect a channelling of anaglyphic displays from the field scans via refraction.

27. Apparatus for the production of anaglyphic images, the apparatus consisting of;

a. an image isolation means being a scanner or digitizer of images or a stereoscopic camera for still or motion stereoscopic capture of an image pair for anaglyphic production as claimed in claim 6 and or a multiplicity of image isolation means or of monocular or stereoscopic cameras for the capture of one or two pairs of image or text for anaglyphic processing of still or motion anaglyphic record by any anaglyphic production method for display as interpolated anaglyphic records on a monitor or screen or as projected display and that may also or alternatively process externally sourced input signals by means of;

b. computer software for still or motion record or;

c. integrated circuitry for still or motion record or;

d. separate analogue and or digital components in series consisting of;

e. a field detection and differentiation means for the detection of field

differentiated signals and to accordingly produce signals as representations of synchronizing signals for an electronic switching means of part f, and for optional color record removal filter/switch of part l, and for index pulse or synchronization signal generator of part n, and for a field interpolating means of part o, or a dual electronic switching means of part p;

f. an electronic switching means that responds to the detection and differentiation means of part e, to switch the images produced from the image isolation means of part a, between said anaglyphic production processes;

g. color selective filters to effect selective color filter treatments of the images produced from the image isolation means of part a, delivered by the electronic switching means of part f;

h. a luminosity compression means that reduces or compresses the luminosity or contrast or output levels of the images produced from the image isolation means of part a, and or from said color selective filters;

i. an anaglyphic color channel saturation means for each of the isolated images thus produced;

j. an image blending means for the images produced from the color saturation means of part i;

k. a contrast expansion means for the color records of the images produced from the image blending means of part j;

l. an optional color record removal filter/switch that responds to the detection and differentiation means of part e, to effect a selective and alternate active removal of second and third color records from the images produced from the contrast expansion means of part k, in a cycle of consistent frequency;

m. a color record filter that reduces the luminosity of a first color record in association with the optional color record removal filter/switch of part l;

n. an index pulse or synchronization signal generator that produces a consistent frequency in response to the detection and differentiation means of part e;

o. a field interpolating means that responds to the detection and differentiation means of part e, for the interpolation of still or motion anaglyphic records as odd and even field scans for where two pairs of image or text from the image isolation of part a, are captured and thus processed in tandem or;

p. a dual electronic switching means that responds to the detection and differentiation means of part e, to selectively switch between two pairs of image or text from the image isolation means of part a, for said anaglyphic processing;

q. a recording medium analogue or digital for the storage and retention of still or motion anaglyphic record thus produced and or for the storage and

retention of still or motion stereoscopic record or records for said processing;

r. a field differentiation and synchronization signal detection means that differentiates between frames and determines the modulation or switching rate and produces signals representative of the same for the switching logic means of part s;

s. a switching logic means that responds to the differentiation and synchronization signal detection means of part r, to select switching or trigger voltages or signals for the color record removal means of parts u and v;

t. a display means of color format for the reproduction and display of said field scans on a monitor or screen or as a projection or any other such color reproduction and display device;

u. a modulating active color record removal means consisting of a color record removal filter/switch that responds to the synchronizing voltage selection of the switching logic of part s, to selectively remove a color record or a cycle of color records that is synchronous with and corresponds to a modulating cycle of anaglyphic color channels selected for removal that represent visual records so as to reveal a color record or a cycle of color records that represent one or more visual records and delivers the re-modulated image signal to said reproduction and display means and or;

v. a modulating passive color record removal means consisting of an electro-optic light modulating filter element that covers or is integral with said reproduction and display means and responds to the synchronizing voltage selection of switching logic of part s, to effect a cycle of passive color removal synchronous with either selected modulating anaglyphic color channel;

x. any visual parallax delivery means contiguous or integral with said display means and where such may consist of a lenticular array of lenses where the orientation of the field scans and that of the lenticular array of lenses is parallel and consists of a frequency of lenses such that each lenticular lens covers an odd and an even field scan line so as to effect a channelling of anaglyphic displays from the field scans via refraction.

THIS PAGE BLANK (0.00)